PLAN SUBMITTAL CHECKLIST

What information do I need to include as part of my building plan submittal package?

1. 4 bound sets of plans (minimum),
2. 1 set of specifications
3. Signed application form SBD-118
4. Fees as determined from Schedule (Note that fees vary depending if the project is to be constructed in a "Certified Municipality". Contact Safety & Buildings or visit our Website for a current list of Certified Municipalities.)
5. Sufficient calculations and information to substantiate that the documents conform to the code must be submitted.
6. *The Worksheets and checklist in this kit were created to help submitters to show conformance to all codes in a clear and logical manner*

FOOTING / FOUNDATION SUBMITTALS (Optional prior to full plan submittal)

A. Design Load Key Plan (Ensure thorough coordination of structural design before construction begins.)

1. Live loads
2. Dead loads
3. Wind loads
4. Snow loads
5. Special loads (drifting, equipment, steeples, shear walls, etc.)
6. Indication of load transfer down to the foundation

A. Footing/Foundation Plans

1. Sizes and depths of footings
2. Anchor bolts, reinforcing (sizes & locations)
3. Perimeter insulation
4. Blasting permits (if needed)

B. Site Plans

1. Distances to property lines, existing buildings, streets, etc.
2. Dimensioned streets or fire department access roads
3. Pertinent recorded easements on adjoining property
4. Type of construction of existing buildings

C. Schematic Floor Plans, Elevations, Wall Sections

1. Exit stair locations
2. Fire walls
3. Window and fire department access openings

D. Calculations or Reference Tables

1. See section E under full plan Building Submittal

E. Worksheets

Several of the worksheets in this kit may be helpful to facilitate this footing and foundation approval, including:

1. Grade Plane Determination Worksheet (GP)
2. Number of Stories Above Grade Worksheet (NS)
3. Multiple Occupancies Worksheet (MO)
4. Allowable Areas Worksheet (AA),
5. Structural Design Worksheet (SD), and
6. Lateral Load Resisting Systems & Connections Worksheet (LC).

F. Footing/foundation requirements;

1. Soil properties (type of soil and bearing capacity of soil).
2. Footing & foundation sizes (width, length, & depth), reinforcement, & anchor bolt details.
3. Reinforcing properties (location, size, type & grade of reinforcing).
4. Anchor bolt sizes, locations, embedment type (hooked, tack-welded nut, etc,), projections above top of footings/foundations, and strengths & capacities of anchor bolts.
5. Pole embedment calculations (if applicable) for both side & end wall poles.
6. Retaining wall details as applicable (width, length, & depth) & reinforcement.
7. Pile foundation details (type of piles used, depth, size, & material strengths) as applicable.
8. Consideration of special loads such as buoyancy and hydrostatic loads as applicable.

G. Minimum 1 sample (critical spot) footing sizing calculation

1. Preferably one calculation will be provided for each different size footing shown on the plans.
2. If it is a pole building, then at least 1 sample pole embedment calculation must be shown for the side wall poles and end wall poles, as well as the footing sizing calculation for such poles.

BUILDING SUBMITTAL (new and addition)

A. Footing/Foundation Plans

1. (See all items from Footing/Foundation Submittals)

B. Site Plans (Plan size plus 8½" x 11" file copy for malls)

1. Distances to property lines, buildings, streets, etc.
2. Dimensioned streets or access roads
3. Pertinent recorded easements on adjoining property
4. Type of construction of existing buildings
5. Barrier-free parking and access paths (include slopes)
6. Court widths

C. Floor Plans

1. Uses and sizes of rooms
2. Exit location, width, lights, distance, distribution, door swings, ramp and stair design
3. Automatic fire sprinkler requirements (Chapter 9 by uses & occupancy, height above or below grade access, hazard protected areas)
4. Fire rated designs, required for issues such as area limits, occupancy, class of construction, sprinkler limits (specify if fire wall, smoke or fire barrier, or fire partition)
5. Window and door schedules (sizes, fire ratings, safety glaze, undercutting, etc.)
6. Sanitary facilities (types, numbers, and locations)
7. Stair and shaft enclosures
8. Isolation of hazards (amount & location of hazardous materials)
9. Smoke detectors (if needed)
   a. Fire alarms (if needed), fire extinguishers
   b. Barrier-free requirements
   c. See Separate Section later in this booklet

Occupancy special requirements (usually in Chapter 4)

D. Elevations/Sections

1. Grade, floor level, and roof elevations
2. Accessibility
3. Exterior openings
4. Egress details (fire escape, assisted rescue platform, stairs)
5. Exterior finish
6. Depth of foundations
7. Stair, ramp & guard construction
8. Headroom
9. Construction materials used (structure, insulation, sheathings & finishes)
10. Structural connections required at load transfers
11. Floor framing and wall headers
12. Wind bracing

E. Building Plan Structural Submittals:

Please note that the following list of structural submittal requirements is not all-inclusive and the department may request additional information and / or calculations on a case by case basis.

1. Live loads (floor, roof, crane, etc.),
2. Itemized dead loads,
3. Snow loads,
4. Wind loads for main wind-force-resisting system, components and cladding,
5. Seismic design loads,
6. Special loads (drifting snow, equipment, steeples, signs, shearwalls, etc.), and
7. Continuous load transfer path to foundations. Structural Calculations sufficient to verify that all lateral load systems are carried to the Foundations
8. All design loads shall be shown on the plans and within the calculations. Sample calculations submitted shall show how the design loads were calculated. The following information, as a minimum, must be provided on the plans and / or calculations in order to determine the snow, wind, and seismic design loads (where applicable):
   a. Terrain category,
   b. Exposure category and factors (snow & wind),
   c. Importance categories and factors (seismic, snow & wind),
   d. Site class determination,
   e. Seismic use group and design category,
   f. Design ground snow load, and
   g. Minimum wind design speed.

F. Framing requirements (floor & roof framing);

1. Member sizes, spacing, material properties and bridging requirements.
2. Materials (wood, steel, trusses, pre-cast, etc.), applicable adjustment factors, and allowable stresses of materials used (bending, shear, compressive, etc.) should be noted or in specifications.
3. Critical bearing, anchorage, & connections needed (when over code table minimum),
4. Shear wall details (if applicable) with at least: location, connector spacing, materials, design capacity of shear wall, and connections of shear wall to roof diaphragm, drag struts, and footings/foundations as applicable.
5. Calculations verifying capacity of floor/roof joists and headers supporting joists.
6. Calculations verifying capacity of diaphragms (include any adjustments) or highlighted table.
7. Structural calculations corresponding to framing plans.
8. Stud and pole design calculations as applicable.
9. Calculations for load transfer to foundations from roof and/or floor framing elements to the foundations, including design of all transferring elements (i.e.: columns, foundations, etc).
10. *At minimum 1 sample (critical spot) joist sizing calculation and 1 sample (critical span or load) support beam sizing calculation must be included in the submitted structural calculations. At least one door/window header calculation taken at the worst case must also be submitted to show adequate design. If diaphragm wind resistance building design, then at least one sample (critical) horizontal diaphragm and one shearwall design must be submitted showing loading is less than system design capacity for the attachment shown on plan.*

G. Masonry construction requirements;

1. Compliance with all of empirical masonry requirements or submitted engineered masonry calculations.
2. Block properties [material, thickness, and type (hollow or solid)].
3. Mortar type and properties of grout.
4. Lateral supports of masonry walls.
5. Reinforcement details (type, location, and strength).
6. Bonding requirements (type of bond and type of tie assemblies).
7. Anchorage of masonry to structural elements (for lateral support of masonry) and roof anchorage or floor anchorage to masonry bearing walls and nonload bearing exterior or interior masonry anchorage to structural framework.
8. Details of bearing on masonry or of masonry bearing on other materials (type & size needed).
9. Veneer details (materials, thickness, backing/bearing supports, method of attachment, joints and relief angles).
10. Control joints are provided at proper intervals.
11. *If using engineered masonry, then complete masonry calculations shall be submitted.*

H. Structural Component Plan Submittals:

Structural Components are those parts of a Building Structure that are pre-manufactured prior to arrival at the construction site. These include:

1. Wood Roof and Floor Trusses
2. Precast Concrete Slab & Wall Panels
3. Pre-engineered Metal Buildings.
4. Laminated Wood Beams
5. Steel Joist Girders

The Division requires that Plans and Calculations for these Components be submitted prior to their manufacture and delivery. There are 2 options available for Component Plan Submittals:

1. Submit the Component Plans with the Building Plans. If the component plans are submitted with the initial building plan set, then one component plan shall be attached to each plan document, creating full plan sets.
2. Since, in many cases, the manufacturer of the Components is not known at the time of original Plan Submission, the Component Plans and Calculations may be submitted at a later date. If this option is used, the following procedure must be followed:
   a. Submit <u>one</u> set of a properly signed and sealed structural component plan (& supporting calculations). The signature and seal on the Component Drawings is to be that of the Component Designer, not the Building Designer. (The Component Designer need not be a State of Wisconsin Registered Professional).
   b. Submit a <u>copy</u> of the Original SB-118 Plan Approval Application Form with an <u>original</u> signature of the building designer on the component submittal line of the application Form. The original Plan Review Letter will indicate whether the Component Plan is to be sent to the original reviewer or to the Madison Office. Please send to the correct location as appropriate.
   c. A component submittal fee of $100 is to be included.
   d. **NOTE**: Truss plans that are part of a pole building design **may not** be submitted as a separate component. One set of truss plans with each building plan set is required. *Minimum four complete plan sets must be submitted for review.*)
   e. *Indication of Review*
   The actual component plan submitted shall also bear an indication of review by the building designer (if different from the structural component designer). Such as a statement to the effect *"I have reviewed against my overall building design and intent and find the component plan acceptable"* (or words to that effect) with the designer's signature. An original seal with signature is NOT appropriate if the building designer is other than the component designer therefore, we are asking for this *"indication of review."*
   f. An identical component set (also bearing indication of review by the building designer if different from the component designer) shall be maintained at the job site. It must be available to state or municipal inspectors and others who have need of this information.
   g. NOTE: The erection plan shall be properly signed and sealed or provided with a signature of an engineer or architect and a stamp indicating review of the erection plan. Changes from the (previously submitted building plan) framing plan must be properly signed and sealed.

h. Owners and designers should also be prepared to present a third similarly noted component plan to the local building inspector or permitting authority (when required by the municipality for permitting authority, inspection, or other purposes).

I. Specific Component Submittal Requirements:

1. Truss plan requirements:

a. Indication of job in which trusses are to be used,
b. Framing plans provided with truss submittal if they were not provided at the time of building review or if such did not provide the following information on the framing plans,
c. Location and designation of all trusses, and
d. Bearing and anchorage conditions.
e. Individual truss plans,
f. Lumber species and grade of all members for wood trusses and material properties for open web steel trusses,
g. Web and chord bracing requirements (locations),
h. Bearing locations and reactions,
i. Member connections, plate types, sizes, gage, orientation and locations,
j. Capacity of connector plates (pounds per nail or pounds per square inch) or required number of nails or square inches of plate area required on each member of each joint, and materials approval number for connector plates or complete structural calculations for connector plates, and
k. Adjustment factors (load duration, wet service factor, repetitive member factor, etc.).
l. Truss calculations for all trusses, including valley, piggy back, side & end jacks. Calculations to include: Truss design loads [dead, live, lateral, special loads (drift, equipment, others), etc.]; Combined effects of axial loads and bending moments on top and bottom chord members; Stress diagrams or calculations to determine axial loads; Complete connector plate calculations or an approved/valid Wisconsin Materials Approval Number shall be shown on the plans (with any calculations required by it); Joist hanger and anchorage calculations (minimum bearing required); Calculations and connections used to resist induced wind suction on open and enclosed structures; and Uplift calculations if trusses are used on a canopy or other open structure.

If current & valid approval number for the metal plate connector is indicated on the truss plans, then the wood truss calculations would have to include all of the information required within the materials approval. If the truss plans do not indicate a current or valid metal connector plate approval number, then all of the requirements specified above will have to be provided.

2. Pre-cast concrete plan requirements:

a. Bearing and anchorage is required (clearly show restrained or non-restrained ends).
b. Details of schedules or plans for plank, beams, and columns,
c.. Plank locations and designations of all pre-cast,
d. Width and depth/thickness and length of pre-cast members,
e. Strand or reinforcement sizes, locations, and concrete cover thickness,
f. Stirrup sizes and locations if required, and
g. Fire resistive rating of pre-cast members if applicable.
h. Structural calculations submitted for all beams, columns, or planks if no approved/valid Wisconsin materials approval number is provided on the plans.

Pre-cast concrete minimum calculations required by material approval (if any) OR if not covered by a Wisconsin Material Approval, then send complete member calculations.

3. Metal building plan requirements:

a. Design loads with complete structural calculations for all beams, columns, girts, purlins, connections, bracing, roof and wall panels, etc. if a valid Wisconsin materials approval number is not provided on the plans.
b. Indication of job in which metal building is to be used and all beam, column, girt, and purlin locations and designations.
c. Footing/foundation plans need to provide footing details (size & location), anchor bolt details (size, locations, & capacities), and side thrust restraint if applicable.
d. Component plan requirements: Purlin and girt sizes and properties, Diagonal bracing locations and materials, Critical connections between load transferring members, Column, beams, and end-wall design & details, and Critical dimensions of webs and flanges of all members at the base, haunch, ridge, and any other location where the member size changes.

Metal building minimum calculations as required by material approval must be submitted OR if metal building does not have Wisconsin Material Approval, then send complete calculations (noted above as item 1) for all members & connections.

4. Laminated wood plan requirements:

a. Indication of job in which laminated wood is to be used,
b. Framing plans need to be provided with laminated wood submittal if they were not provided at the time of building review or if such did not provide the following information on the framing plans,
c. Location and designation of all laminated wood members, and
d. Bearing and anchorage conditions.
e. Laminated wood plans,
f. Width, depth/thickness and length of laminated wood members,
g. Lumber species and grade of all members,
h. Sketch showing laminated wood geometry,
i. Laminated wood design loads (live, dead, special loads, etc.),
j. Bearing locations and reactions,
k. Minimum bearing required,
l. Adjustment factors (load duration, wet service, repetitive member factors, etc.).
m. Bearing and anchorage details, and
n. Structural calculations for laminated wood members.

At minimum 1 sample (critical spot) laminated wood frame sizing calculation and 1 sample (critical span or loading) support beam sizing calculation must be included in calculation set.

5. Structural Steel and Steel Truss Girder plan requirements:

a. Indication of job in which materials are to be used,
b. Framing plans need to be provided with steel submittal if they were not provided at the time of building review or if such did not provide the following information on a framing plan,
c. Location and designation of all members,
d. Bearing and anchorage details, and
e. Design loading of each member (including all special loads).
f. Complete Connection Details, Connector Plates, Bolts, Baseplates and other connectors as required.
g. Depth of girder trusses,
h. Span of members,
i. Panel point loads,
j. Sketch showing girder truss geometry, connections, & member sizes, and
k. Bracing locations and requirements.
l. Design loads, and
m. Structural calculations.

Minimum of 1 complete detailed sample (critical) member sizing calculation must be included in calculation set & the sizing calculation for each type should be included.

J. Fire-Resistive Details

1. Design and listing of walls, ceilings, and roof systems (if required to be rated),
2. Location & extent (horizontally & vertically)
3. Materials used in the assembly
4. Assembly listing source, and
5. Hourly rating (on plan and section).
6. Complete section through the assembly (including required attachments),
7. Firestopping and firesafing (comply with tested & listed firestop systems) IBC 711,
8. Opening protective assemblies (label, size limits) IBC section 714, and
9. Draftstopping IBC section 716.

K. Building Envelope Thermal Calculations

1. Building envelope thermal compliance calculations must be sent with the Building Plans-
2. **Note**: These are considered a part of the Building Plans Submission, not the HVAC Plans. Building Plans cannot be Approved without this submittal,
3. See Comm Chapters 63 & 64 Worksheets.
4. Wisconsin also accepts thermal performance calculations generated by the **COMcheck-EZ** computer program. It is available by calling Pacific Northwest Labs at 1-800-270-2633 or for free download from internet at http://.energycodes.org/comcheck/com_dwn.html

L. Miscellaneous Calculations:

1. Occupant load and exit width calculations, especially for large buildings.
2. Grade plane, height and number of stories above grade plane.
3. Sanitary fixture determination, minimum number of each fixture type.
4. Hazardous materials control area quantities (if applicable).

Sample Worksheets for most of these calculations can be found later in this booklet.

M. Lighting Plans

Lighting Plans are no longer required to be submitted for state plan review. However, Lighting must still meet all applicable provision of the Code. Lighting Plans or Calculations shall be kept at the jobsite for review by state or local inspectors. The following points shall be addressed in the Plans &/or Lighting Worksheets (in back of this booklet).

1. Area controls Comm 63.1050(1)
2. Lighting reduction controls Comm 63.1050(2) and Daylight controls at windows & skylights Comm 63.1050(3)
3. Shut-off controls Comm 63.1050(4)
4. Display lighting controls Comm 63.1050(5)
5. Exterior lighting controls Comm 63.1050(6)
6. Hotel/Motel/Guest room Comm 63.1050(7)
7. Device performance requirements Comm 63.1051
8. Exterior Lighting and Power Allowance Comm 63.1041, 63.1042, and Comm 63.43
10. Interior Lighting, Comm 63.1044, 63.1045 and Interior lighting power allowance, Comm 63.1046
    I. Complete building method Comm 63.1047
    II. Area category method Comm 63.1048
    III. Activity method Comm 63.1049
11. Multiple interlocked systems Comm 63.1045(1)
12. Track Lighting Comm 63.1045(4)(a) and Incandescent sockets Comm 63.1045(4)(c)
13. Exit signs Comm 63.1052
14. Tandem wiring Comm 63.1053

BUILDING SUBMITTAL (Alterations)

A. TENANT SPACE PLANS IN MULTIPLE TENANT BUILDINGS

1. Schematic Plan Indicating Existing Conditions. This Plan should show the complete existing facility.
2. Complete building exiting plan showing all common exits and stairways,
3. All fire-resistive walls (ratings & locations),
4. Location and number of public sanitary facilities, and
5. Location of project within the building.
6. Pertinent Documents Such As Code Variances previously approved, and Condition of past plan approval that restrict this space or other spaces that affect or are affected by this space.
7. Building Submittal Requirements
8. All applicable items from previous building submittal list.
9. **Note**: Once the owner submits tenant alterations (e.g., for a new building "shell") to a particular Safety & Buildings plan review office or a certified municipality, (assuming all tenant spaces are under 100,000 cubic feet) all subsequent submittals must be made to the same office. It is possible to later designate a "new" review office, but this will require a letter from the owner and may be expected to result in some delays of approvals for the submitter.

B. OTHER BUILDING ALTERATION SUBMITTALS

NOTE: In addition to the "general' and "occupancy" requirements shown on plans for the work being done, a SCHEMATIC of "existing" conditions pertinent to the work being done must be provided on the submitted plan set.

Schematic Plan of Existing Conditions Includes:

1. Site plan information including property lines,
2. Occupancy (prior to alterations),
3. Existing/new construction clearly identified,
4. Number of stories and roof elevations,
5. Class of construction,
6. Fire-resistive wall locations/ratings,
7. Sprinkler protected areas,
8. Existing floor plans, etc.
9. Exit and stairway locations, and
10. Existing barrier-free features (entrances, toilet facilities, etc.).
11. Also include a summary of any previously approved petitions for variance.